IN THE CLAIMS:

Please amend the claims as follows:

1-12. (canceled)

13. (new) A car control unit for an automatic transmission having a plurality of gears and a plurality of synchronizers capable of transferring a torque from a drive power source to wheels via a clutch, an input shaft, and an output shaft, said car control unit carrying out shifting wherein a first torque transmission path from said input shaft to said output shaft, formed by a first connection between said gears and said synchronizers, is switchable to a second torque transmission path from said input shaft to said output shaft, formed by a second connection via at least one intermediate torque transmission path, formed by a third connection using one of said synchronizers having a smaller reduction ratio than that in the first connection, in a state that said clutch is engaged, further comprising:

state discrimination means for detecting or inferring temperature, heat quantity, or abrasion loss of said synchronizers as a parameter, and

synchronizer selecting means for selecting a synchronizer to form one of said at least one intermediate torque transmission paths according to said parameter detected or inferred by said state discrimination means.

14. (new) A car control unit according to Claim 13, wherein said synchronizer selection means, when said parameter is larger than a predetermined value, selects at least two synchronizers to form said

intermediate torque transmission path.

15. (new) A car control unit for an automatic transmission having a plurality of gears and a plurality of synchronizing mechanisms capable of transferring a torque from a drive power source to wheels via a friction clutch, an input shaft. and an output shaft, each of said synchronizing mechanisms being provided with a synchronizer capable of transferring a torque by friction, said car control unit carrying out shifting by forming a first torque transmission path from said input shaft to said output shaft by a first connection of said gears and said synchronizing mechanisms, when said first torque transmission path is switched to a second torque transmission path from said input shaft to said output shaft formed by a second connection, transferring a torque from said input shaft to said output shaft by employing at least one synchronizer in a state that said friction clutch is engaged, after forming at least one intermediate torque transmission path by a third connection employing said one synchronizer, transferring said torque of said drive power source from said input shaft to said output shaft first via said at least one intermediate torque transmission path and then via said second torque transmission path. further comprising:

state discrimination means for detecting or inferring temperature, heat quantity, or abrasion loss of said one synchronizer as a parameter, and

drive power source torque control means for reducing said torque of said drive power source according to said parameter detected or inferred by said state discrimination means.

16. (new) A car control unit according to Claim 15, wherein

said parameter detected or inferred by said state discrimination means is at least one of the temperature of said frictional surface of said synchronizer, the heat quantity of said synchronizer, and the abrasion loss of the synchronizer and

said drive power source torque control means. when said parameter is larger than a predetermined value. reduces said torque of said drive power source.

17. (new) A car control unit including an automatic transmission having a plurality of gears and a plurality of synchronizers capable of transferring a torque from a drive power source to wheels via a friction clutch, an input shaft, and an output shaft. said synchronizers being capable of transferring said torque by friction, said car control unit having a first shift mode for carrying out shifting by forming a first torque transmission path from said input shaft to said output shaft by connection of said gears and said synchronizers, when switching said connection of said gears and said synchronizers from a first connection to a second connection in a state that said friction clutch is engaged. switching a transfer path formed by said first connection to at least one intermediate transfer path formed by one of said synchronizers and then switching to a transfer path formed by said second connection and a second shift mode for carrying out shifting by, when switching said connection of said gears and said synchronizers from the first connection to the second connection, in a state that

said friction clutch is not engaged. switching a transfer path formed by said first connection to a transfer path formed by said second connection. further comprising:

state discrimination means for detecting or inferring a state of a frictional surface of at least one of said synchronizers and

shift mode switching means for switching said first shift mode and said second shift mode according to a parameter indicating said state of said frictional surface detected or inferred by said state discrimination means.

18. (new) A car control unit according to Claim 17, wherein:

said parameter indicating said state of said frictional surface detected or inferred by said state discrimination means is at least one of temperature of said frictional surface of said synchronizer, or heat quantity of said synchronizer, or abrasion loss of said synchronizer and said drive power source torque control means. when said parameter is larger than a predetermined value. switches to said second shift mode from said first shift mode.

19. (new) A car control unit including an automatic transmission having a plurality of gears and a plurality of synchronizers capable of transferring a torque from a drive power source to wheels via a friction clutch, an input shaft, and an output shaft, said synchronizers being capable of transferring said torque by friction, said car control unit having a first shift mode for carrying out shifting by forming a first torque transmission path from said input shaft to said output

shaft by connection of said gears and said synchronizers, when switching said connection of said gears and said synchronizers from a first connection to a second connection in a state that said friction clutch is engaged, switching a transfer path formed by said first connection to at least one intermediate transfer path formed by one of said synchronizers and then switching to a transfer path formed by said second connection and a second shift mode for carrying out shifting by, when switching said connection of said gears and said synchronizers from the first connection to the second connection, in a state that said friction clutch is not engaged, switching a transfer path formed by said first connection to a transfer path formed by said second connection, further comprising:

state discrimination means for detecting or inferring a state of a frictional surface of at least one of said synchronizers,

drive power source torque control means for reducing said torque of said drive power source according to a parameter indicating said state of said frictional surface detected or inferred by said state discrimination means, and

shift mode switching means for switching said first shift mode and said second shift mode according to a parameter indicating said state of said frictional surface detected or inferred by said state discrimination means.

20. (new) A car control unit according to Claim 19, wherein

said parameter indicating said state of said frictional surface detected or inferred by said state discrimination means is temperature of said frictional

surface of said synchronizer, or heat quantity of said synchronizer, or abrasion loss of the synchronizer,

said drive power source torque control means, when said parameter is smaller than a predetermined value, reduces said torque of said drive power source in said first shift mode, and

said drive power source torque control means, when said parameter is larger than said predetermined value, switches to said second shift mode from said first shift mode.

21. (new) A car control method for an automatic transmission having a plurality of gears and a plurality of synchronizers capable of transferring a torque from a drive power source to wheels via a clutch, an input shaft, and an output shaft. said synchronizers capable of transferring said torque by friction, said car control method carrying out shifting by forming a torque transmission path from said input shaft to said output shaft by connection of said gears and said synchronizers, when switching said connection of said gears and said synchronizer from a first connection to a second connection, in a state that said friction clutch is engaged. switching a transfer path formed by said first connection to at least one intermediate transfer path formed by at least one of said synchronizers and then switching to a transfer path formed by said second connection, comprising the step of:

detecting or inferring a state of a frictional surface of said synchronizer and selecting a synchronizer for forming said intermediate transfer path according to a parameter indicating said detected or inferred state.

22. (new) A car control method including an automatic transmission having a plurality of gears and a plurality of synchronizers capable of transferring a torque from a drive power source to wheels via a friction clutch, an input shaft, and an output shaft, said synchronizers being capable of transferring said torque by friction, said car control method carrying out shifting by forming a torque transmission path from said input shaft to said output shaft by connection of said gears and said synchronizers, when switching said connection of said gears and said synchronizers from a first connection to a second connection, in a state that said friction clutch is engaged, switching a transfer path formed by said first connection to at least one intermediate transfer path formed by at least one of said synchronizers and then switching to a transfer path formed by said second connection. comprising the step of:

detecting or inferring a state of a frictional surface of said synchronizer and reducing said torque of said drive power source according to a parameter indicating said detected or inferred state.

23. (new) A car control method including an automatic transmission having a plurality of gears and a plurality of synchronizers capable of transferring a torque from a drive power source to wheels via a friction clutch, an

input shaft, and an output shaft, said synchronizers being capable of transferring said torque by friction, said car control method having a first mode for carrying out shifting by forming a torque transmission path from said input shaft to said output shaft by connection of said gears and said synchronizers. when switching said connection of said gears and said synchronizers from a first connection to a second connection, in a state that said friction clutch is engaged, switching a transfer path formed by said first connection to at least one intermediate transfer path formed by at least one of said synchronizers and then switching to a transfer path formed by said second connection and a second mode for carrying out shifting by, when switching said connection of said gears and said synchronizer from the first connection to the second connection, in a state that said friction clutch is not engaged, switching a transfer path formed by said first connection to a transfer path formed by said second connection, comprising the step of:

detecting or inferring a state of a frictional surface of at least one of said synchronizers and switching said first shift mode and said second shift mode according to a parameter indicating said detected or inferred state.

24. (new) A car control method for an automatic transmission having a plurality of gears and a plurality of synchronizers capable of transferring torque from a drive power source to wheels via a friction clutch, an input shaft, and an output shaft, said synchronizers being capable of transferring said torque by friction, said car control method having a first mode for carrying out shifting by

forming a torque transmission path from said input shaft to said output shaft by connection of said gears and said synchronizers, when switching said connection of said gears and said synchronizers from a first connection to a second connection. in a state that said friction clutch is engaged, transferring said torque of said drive power source from said input shaft to said output shaft by employing at least one synchronizer, and switching a transfer path formed by said first connection to at least one intermediate transfer path formed by at least said one synchronizer and then switching to a transfer path formed by said second connection and a second mode for carrying out shifting by, when switching said connection of said gears and said synchronizer from the first connection to the second connection, in a state that said friction clutch is not engaged, switching a transfer path formed by said first connection to a transfer path formed by said second connection, comprising the step of:

detecting or inferring a state of a frictional surface of at least said one synchronizer and reducing said torque of said drive power source according to a parameter indicating said detected or inferred state or switching said first shift mode and said second shift mode according to a parameter indicating said detected or inferred state.